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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,338

05/22/2006

Gianpiero Mastinu

163-679

2161

7590 05/14/2009
James V Costigan
Hedman & Costigan
1185 Avenue of the Americas
New York, NY 10036-2601

EXAMINER

NOORI, MAX H

ART UNIT

PAPER NUMBER

2855

MAIL DATE

DELIVERY MODE

05/14/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,338	Applicant(s) MASTINU ET AL.	
	Examiner Max Noori	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-9,12-15 and 17-25 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,4-9,14,15,17 and 21-25 is/are rejected.
- 7) ☒ Claim(s) 12,13 and 18-20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/21/08</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 7-8, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Byun et al. in view of Ohsato et al.

Regarding claims 1, 8, Byun et al., discloses a parallel type six-axes force-moment measuring apparatus can be applied to a body, with features of the claimed invention including the related method with a body with an element, connected together through a plurality of connection elements wherein the body can be stressed by a forces with related vectors and moment with six components (see claim 6). The components are obviously related with specific mathematical relationship. Even though, for meaningful measurement, there must be some elasticity in the elements, Byun does not elaborate on the nature of the related elements. The use of flexible connection, however, in this kind of force sensor, is notoriously known, for example, Ohsato et al., is presented to show such arrangement. Ohsato et al., discloses a six axis force sensor with features of the claimed invention including a measuring structure with plurality of elements connected together through plurality of elastic (see col. 31, line 13) members. The forces and moments are described in three axes and are obtained through specific mathematical

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relations (see, for example, col. 3). Therefore, it would have been obvious for a skilled artisan at the time of the invention to modify Byun, using conceptual teaching of Ohsato et al., and utilize elastic elements in order to enhance the deflection of the sensing elements and hence provide for more accurate measurement.

Regarding claims 7, 14, the measurements are carried by strain gauge (figure 4, element S1).

2. Claims 4-6, 9, 15, 17, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Byun et al. in view of Ohsato et al., , as applied to claims above, and further in view of Hilton.

Regarding claims 4, 9, even though the three arms are connection by proper joints, Byun et al., does not teach the use of spherical one. The use of spherical joint, in these kinds of force and moment sensors, however, is notoriously known. For example, Hilton discloses a force and torque converter, teaching the use of spherical (element 35). Therefore, it would have been obvious for a skilled artisan at the time of the invention to modify Byun using teaching of Hilton to provide for any kind of suitable joint such as spherical joint in order to provide for a more flexible joint in order to allow for more accurate results.

Regarding claims 5-6, and 15, 17, 21, and 25, Byun et al., teaches the use of two similar plates (elements 31 and 34).

Regarding claims 23-24, spherical joint generally use similar joint structure.

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3. Claims 12-13, 18-20, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Amendment

4. Applicant's amendment and arguments filed 1/21/09 have been fully considered, but they are moot in view of the new ground of rejection.

5. THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Max H. Noori whose telephone number is (571) 272-2185. The examiner can normally be reached on Tuesday-Friday from 8:00 AM to 6:00 P.M.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-2800. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306. The central fax number is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Max Noori/

Primary Examiner, Art Unit 2855

Thursday, May 14, 2009